

Pest Update (June 23. 2010)

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Note: samples containing living tissue may only be accepted from South Dakota. Please do not send samples of dying plants or insect from other states. If you live outside of South Dakota and have a question, please send a digital picture of the pest or problem instead.

Available on the net at:

<http://sdda.sd.gov/Forestry/Educational-Information/PestAlert-Archives.aspx>

Any treatment recommendations, including those identifying specific pesticides, are for the convenience of the reader. Pesticides mentioned in this publication are generally those that are most commonly available to the public in South Dakota and the inclusion of a product shall not be taken as an endorsement or the exclusion a criticism regarding effectiveness. Please read and follow all label instructions and the label is the final authority for a product's use on a particular pest or plant. Products requiring a commercial pesticide license are occasionally mentioned if there are limited options available. These products will be identified as such but it is the reader's responsibility to determine if they can legally apply any product identified in this publication.

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Plant development for the growing season

We are seeing the littleleaf lindens in bloom so we are about on schedule for the year.

Treatments to do now



Spruce bud scale crawlers will be hatching soon. The scale resembles a small round, reddish bud and they can be found on near the tips of the branches where the side branches attach to the shoot. They, and their mobile young called crawlers, suck the sap from the shoots resulting in dieback and decline of the lower branches. Since

these are soft scales they produce honeydew that results in a black, sooty appearance to the needles and twigs. The scales have one generation per year and the crawlers' hatch about the time littleleaf lindens are in bloom – meaning now. The time to control them is during the crawler stage. The best treatments are insecticides containing acephate or carbaryl as the active ingredient and applied on the foliage and shoots near the tips. Products containing imidacloprid can be effective as a soil drench but are best applied in the fall for control the following year.



We are also coming up to the time to treat for spruce needleminer. The needleminer

(*Endothenia albolineana*) gets its name from it's the fact that the young larvae are so tiny they can live inside the needle, mining it as they feed. They eventually outgrow their home and then create a nest of webbed, detached needles to live in. The larvae usually feed on the lower, exterior needles, almost stripping the tips of needles but they can

also be found in the interior of the tree and even the tops of young trees. The adults are small moths that will begin flying soon and depositing eggs on the needles. Control is now generally acephate though carbaryl, is very effective. The trees should be treated in the next week as the adults begin to take flight.

Treatments to do soon



Apple maggot (*Rhagoletis pomonella*) is one of the insects that can infest apples in our state and is the most serious problem in the eastern half of our state.

Symptoms of a maggot infestation are dimpled, lumpy appearance to the surface of the apple and the flesh often turning mushy and containing brown trails or streaks. A sure sign of the pest – an unpleasant if you happen to find one, or *half* of one, while eating the apple – is a small (1/4”), creamy white and legless larva in the fruit. The adults, resembling houseflies with banded wings, are currently flying and laying eggs on the developing apples and will continue with egg-laying for another month. Once the eggs hatch the larvae burrow into the apple. The apple maggot pupates in the soil and emerges as an adult beginning in early July. However emergence and egg laying probably will not begin in earnest until the middle of July so there is still time for control measures (even if any eggs are laid earlier in the season the egg is either crushed by the expanding fruit or the larvae cannot survive in the high-acid of the newly developing apple). Control is an insecticide containing carbaryl, with applications beginning in early to mid July this year with subsequent applications every 7 to 10 days for three or four applications. Apple maggots tend to emerge from the soil after a 1/2-inch rains so some growers time applications with rainfall but this is not necessary for the home-production. Another means of management is to place 3-inch diameter bright red balls in the tree, about 2 in semi-dwarf trees (about 10-15 feet tall) and 5 in standard size trees (about 20-30 feet tall) that are covered with a sticky material called tanglefoot. The female apple maggot always flies to the biggest, brightest apple to lay her eggs and these will be the biggest, brightest “apples” in the tree. You cannot eliminate the pest by using this control but the population can be significantly reduced. The “apples” can be made from material found in almost any garden store or you can buy the completed “apples” from the internet, try www.gardensalive.com.

Current concerns

I am receiving reports of trees and shrubs with yellowing and wilting foliage. A common species reported during the past week is sumac (*Rhus* spp), though cherries and even maples are being mentioned. The symptoms, yellowing (sometimes red for maples) and wilting of foliage may be due to the wet weather we have been experiencing during the last month. The flooding and saturated soils result in limited root growth or even in root decline and these conditions have reduced water uptake. While it may sound odd, the trees and shrubs are suffering from the lack of water due to standing in water. Roots require oxygen to survive and water is absorbed and moves through living, not dead, roots. Cherries are one of the genera most susceptible to wet soils, but

sumacs and sugar maples are also susceptible and expressing symptoms at this time. There is nothing that can be done except hope for drier weather.

At this time of year I start receiving calls about seedling eastern redcedars (*Juniperus virginiana*) and even Rocky Mountain junipers (*J. scopulorum*) that are turning brown. These are generally seedlings planted this spring that looked nice and green then and now are almost a brown. The caller wants to know what “bug” is killing their seedlings (and what to spray) or if the district gave them bad stock (or planted it wrong). The brown symptoms are rarely due to a disease or planting but instead are a physiological problem associated with recently planted juniper seedlings. The symptom is called “flagging” and is the browning of the juvenile foliage of the cedars due to the root system not able to absorb the amount of water required by the high transpiration rate. Cedars have a very rapid transpiration rate – the reason they make a poor Christmas tree, they dry out quickly in the home – and survive by absorbing an equally large amount of water. They are referred to as water spenders, and along with oaks and a number of other species, survive on dry sites not by giving up less water through transpiration but absorbing more water through the roots. The brown foliage turns green again by late summer as the hot weather cools, reducing transpiration, and the root system recovers from transplanting and absorbs more water. The key to knowing whether this is a disease such as phomopsis twig blight or merely flagging is examine the foliage to see if it is now turning gray as well as brown and the scale leaves are dry and becoming brittle – symptoms of twig blight – or the foliage scales are just turning brown but are still soft and pliable – the flagging. The flagging is a little more common this year, ironically due to the wet soils that have further limited root growth and water uptake.



We are still seeing a lot of frost or dry wind injury on Colorado blue spruce this spring.

The common symptoms are curling shoot tips and these often only appear on the south side of the tree (or south side of the windbreak row) or on trees that are in a low location. The tips curl over a short time period and many tree owners attribute this incorrectly to herbicide drift. The symptoms associated with frost are a quick

development of curled tips but no new foliage is beginning to curl at this time and the symptoms are concentrated on the south sides of the trees. Nebraska is also seeing similar injury and has attributed some of this to dry winds that may have desiccated the newly expanding foliage. Regardless of the cause, the trees will not be killed by the loss of some of their shoot tips but may appear misshapen as laterals assume the role of shoot tips. This is probably best corrected by pruning out the curled tips back to a live bud or side branch. There are several other reasons for the tips to curl on a spruce. We occasionally see a shoot borer that burrows into the young developing shoot causing the tip to curl. Trees infested with the borer generally have randomly scattered curled tips rather than the injury

by concentrated on the south side of the tree. If these shoots are cut open you'll find that the pith is hollow and there might even be a small larvae found inside. The other possibility is a very small mite, not the spruce spider mite but another mite species.

Dutch elm disease is beginning to show up in trees across the state. Trees infected with Dutch elm disease generally have branches, or perhaps the entire canopy, dropping leaves at this time. These fallen leaves are usually yellow, curled, and dry. The sapwood in the branches with these dry, curled leaves still attached will typically have brown streaking. The disease cannot be confirmed from merely yellowing or browning leaves. There is another disease called black spot that is producing similar symptoms at this time. Elm trees infected with the foliage disease black spot will also have the ground littered beneath them with leaves but these leaves will be yellow with small black spots, not curled and be moist. Black spot disease will not result in green or brown streaking of the sapwood and this is usually our best means of determining the presences of the disease in a tree. The disease can be confirmed by isolating and identifying the fungi in a culture but this requires that the samples be at least ½ inch in diameter and about 6 inches long and containing the streaking. Samples of smaller twigs or just leaves are not very helpful for confirming the fungi.

The best means of managing Dutch elm disease in a community is to quickly remove infected trees to prevent infecting nearby healthy elms via root graft transmission. Valuable elms can be protected with injections of any number of fungicides but these need to be applied by a commercial applicator and treatments must be redone every two to three years.

E-samples



I received this excellent photograph of juniper bloom rust on serviceberry from Dave, one of the Department of Agriculture foresters. This is a similar disease to cedar-apple rust except it affects serviceberries rather than apples. The infection also results in swollen shoots and leaf petioles (as well as the aecia, the fungal fruiting structures forming on the leaf midrib and petiole). The disease is not a serious threat to junipers through it does form a “broom” a crowded pocket of stunted shoots along a branch. The primary problem is the defoliation of the serviceberry plants.

Samples received

Bon Homme County

What is wrong with these Colorado blue spruce at Don and Marge's place?

This may be cytospora canker though it would be found further back on the sample. This canker disease is very common on spruces that are 20 years

old or older and often begin appearing in a single tree or two before being noticed in the surrounding trees. Typical symptoms are the loss of needles in the lower branches and this loss gradually continuing to work its way upward until perhaps half the crown is composed of bare branches. These bare, or near bare, branches will usually have bluish white resin blisters along their length and these generally are covering the cankers. There is no effective control for this disease other than maintaining the tree's health with watering during dry spells and pruning away dead and dying branches. This disease is the reason while Colorado blue spruce has such a short (20 to 30 year) life in the landscape.

Brown County

What is wrong with this spruce?

It was full of the webbed and casted needles left by the spruce needle miner. See more information regarding this pest under "Treatments to do now."

Butte County

What is wrong with these American elms?

The leaves are turning brown.

The browning leaves may be symptoms of Dutch elm disease. We are currently seeing the yellowing, browning and wilting of elm leaves in Brookings due to the disease. While the symptoms are consistent with what is expressed from the disease I cannot confirm the presence of the fungus as I need shoots, about ½ inch diameter or slightly larger and about 4 inch long to determine if the fungus is present. See more information about the disease and sample collecting under "Current Concerns."

Campbell County

Here is a maple and oakleaf mountainash from Selby. What is the problem with them?

The Amur maple leaves are very chlorotic and this is a common problem with this tree species, particularly during wet springs when the limited iron availability is further limited due to the reduced root growth. There is not much that can practically be done to correct this problem other than avoid planting this species in alkaline soils. However, I have seen planting of this tree be yellow one year, often a wet year, and then green leaves the next so I would see if the condition improves next year. As to the oakleaf mountainash, the sample looked fine; I could not find anything wrong with the leaves that were included in the bag.

Clay County

What is wrong with this apple tree? All the leaves are spotted.

This is frog-eye leaf spots on apple caused by *Botryosphaeria obtusa*. The spots start out as small circular dots often with a purplish margin, by mid-summer these spots will turn brown and be more a blotch than a dot. The leaves will also turn yellow and fall prematurely. The fruit may also become infected and you'll find purplish dimples on the skin and it often shrivels and drops prematurely. There is no effective control at this time of year.

Marshall County

This is from a Connell Red apple tree. The buds and young leaves on the spurs are dying. The pears looks similar last year and now they are dead.

This is fireblight, a very common bacterial disease of apples and pears. Sometimes the disease only shrivels the flowers and expanding leaves and this is due to the infection occurring first in the flowers (the disease can be transmitted by pollinator carrying the infection from infected to healthy trees) rather than in the shoots. The shoot infection usually has symptoms of shriveled and blackened leaves along the branch with the terminal often drooping into a Sheppard's crook. There is little that can be done to control the disease other than pruning out infected shoots and branches (but be sure to treat the pruners with Lysol Disinfectant between cuts to avoid spreading the disease further). Unfortunately many pears are very susceptible to the disease and Connell Red apples are also considered one of the more susceptible apples for this disease.

Spink County

This is from a juniper with a lot of branch dieback and decline. Some of the trees are showing a little browning, others are clearly dying. Is this juniper blight?

The problem is most likely botryosphaeria canker. This is a common canker disease of junipers in our state and when I see entire trees dying back or entire branches I suspect this as one of the possible culprits. The juniper twig blights, such as phomopsis, that are also common in our state generally just cause the tips to dieback rather than whole branches. Symptoms also include a darkening of the branch, usually at the base, and this area is also sunken. Winter injury and drought are two predisposing factors associated with the disease. I could not confirm the presence of the disease from the sample; I need a longer branch to look for this disease (or even cedar bark beetles, another common reason for the entire tree dying back – if it is bark beetles you'll find lots of small, almost pin-size holes along the trunks).

Spink County

These leaves are from a homeowner in Redfield. The plant has curling leaves.

The plant is common buckthorn, a shrub or even small tree, which is considered a weed due to its invasive nature. The curling foliage is probably due to herbicide drift. I have seen this before on buckthorn and while it is tough to kill with herbicides, it does seem sensitive to leaf curling from drift of 2,4-D or similar chemicals.

Sully County

One limb of the apple tree is losing its leaves and it seems to be more affected than the rest.

I would have thought, based on the description that I would have found fireblight in the sample but it appears to be apple scab. Fireblight is still a possibility so I don't disagree with the owner's thought of removing the limb but be sure to spray the hand saw with Lysol Disinfectant to avoid possible transmission of the bacterial disease.

Walworth County

What is the problem with these elms in Mobridge? One of the trees looks very bad and the others are starting to decline.

This may be Dutch elm disease, but I cannot tell for certain due to the small sample. See information under "Current Concerns" for more on collecting samples for Dutch elm disease.

Yankton County

Is this anthracnose on Jerry's maple tree?



Yes, the symptoms of anthracnose on maples are a little different than that of ash anthracnose and it is due to a different pathogen. I often see young leaves, those at the shoot tip, shriveled by the disease and even the succulent shoot tips killed. This is another disease that seems to appear more severe when we have a cool, wet spring.

Yankton County

Is this tip blight on spruce?

No, there were no signs of disease and this appears to be the problem with spruce discussed under "Current Concerns"